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Leydig, Voit & Mayer, Ltd. (Frankfurt office)
Two Prudential Plaza, Suite 4900
180 North Stetson Avenue
Chicago, IL 60601-6731

EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PETER BAUR and SERGE NASSIF

Appeal 2015-006695
Application 12/917,508
Technology Center 3700

Before JAMES P. CALVE, BRANDON J. WARNER, and
FREDERICK C. LANEY, *Administrative Patent Judges*.

CALVE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from the final rejection of claims 1 and 3–8. Appeal Br. 2. Claim 2 is cancelled. *Id.* at 1. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

CLAIMED SUBJECT MATTER

Claim 1, the sole independent claim, is reproduced below.

1. A method for starting an internal combustion engine of a motor vehicle connected to a transmission via a starting device and operated in a start/stop operating mode, which comprises the steps of:

feeding a hydraulic medium to the starting device through a valve device using a hydraulic pump that is driven by the internal combustion engine, the feeding being carried out via the further steps of:

actuating the valve device using a control unit, before the internal combustion engine is started by a starter, such that the valve device enables delivery of the hydraulic medium to the starting device; and

actuating, via the control unit, the hydraulic pump during a starting of the internal combustion engine so as to deliver the hydraulic medium directly into the starting device and so as to simultaneously start the internal combustion engine and fill the starting device with the hydraulic medium, the filling of the starting device bringing about a mechanical operative connection between the internal combustion engine and the transmission by means of the starting device.

REJECTION

Claims 1 and 3–8 are rejected under 35 U.S.C. § 102(b) as anticipated by Eguchi (US 6,776,739 B2, iss. Aug. 17, 2004).

ANALYSIS

Appellants argue claims 1 and 3–8 as a group. *See* Appeal Br. 3–5. We select claim 1 as the representative claim with claims 3–8 standing or falling with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

The Examiner finds that Eguchi discloses a method for starting an internal combustion engine by actuating valve device CV using control unit (ECU) at time t_0 before starting the engine with a starter or at beginning the start of the engine and actuating a hydraulic pump during a startup of the engine to deliver hydraulic fluid to the starting device simultaneous with the start of the engine. Final Act. 3; Ans. 5–6.

Appellants argue that Eguchi does not use a control unit that actuates a valve device before starting the engine or actuates a hydraulic pump to deliver a hydraulic fluid into the starting device. Appeal Br. 4. Appellants argue that Eguchi waits to start the engine E until after the completion of the engagement preparation of the starting clutch and thus teaches away from simultaneous delivery of hydraulic medium using a pump that is driven by an internal combustion engine while starting the engine as recited in claim 1. Appeal Br. 4; Reply Br. 3.

The Examiner's finding that Eguchi discloses actuating a valve device with a control unit (ECU) before the internal combustion engine is started is supported by a preponderance of evidence. Eguchi activates control valve CV and linear solenoid valve at time t_0 as shown by the control signal (line A) in Figure 4. Eguchi, 8:62–67; Ans. 5. The Examiner reasons that control valve CV is activated at time t_0 before engine start to enable the delivery of hydraulic fluid to starting clutch 5 because Figure 4 of Eguchi shows clutch pressure increasing at t_0 as the engine starts. Ans. 5. We agree. As the engine is started, hydraulic fluid is delivered to starting clutch 5 and clutch pressure P_c builds as shown by dashed line B in Figure 4. Eguchi, 9:1–5. Thus, the opening of control valve CV at time t_0 enables the delivery of hydraulic fluid to starting clutch 5 when the engine is started, as claimed.

Appellants' argument that the prior art method disclosed in Eguchi in the Background of the Invention does not actuate a valve device before the starting of the engine (Appeal Br. 4) does not apprise or persuade us of error in the Examiner's further findings that Eguchi discloses this method step in Eguchi's inventive method that overcomes the prior art problem of engine racing. *See* Eguchi, 1:29–33, 8:9–9:65. Indeed, Appellants appear to agree that Eguchi performs this step before the start of the engine because “Eguchi waits to start the engine E until ‘[a]fter the completion of the engagement preparation of the starting clutch.’” *See* Reply Br. 3. In addition, Eguchi discloses that setting engine-start flag to ON, i.e., F(ES)=ON, as shown in Figure 4 allows the engine to be started thereafter and fluid to be pumped to starting clutch 5 thereafter to increase clutch pressure. *See* Eguchi, 8:9–41.

The Examiner's finding that Eguchi discloses actuating via the control unit (ECU) a hydraulic pump during the starting of the internal combustion engine to deliver hydraulic medium directly into the starting device and to start the internal combustion engine simultaneously to fill the starting device with the hydraulic medium is supported by a preponderance of evidence. Final Act. 3; Ans. 5–6. In this regard, Eguchi discloses that the start of the electrical motor generator M drives output shaft Es of the engine, which also rotates input shaft 1, which is connected to output shaft Es, to drive pump P. Eguchi, 8:42–61, 9:5–11, 5:65–6:2. Eguchi discloses that oil is discharged from hydraulic pump P as a result of rotation by electric motor generator M at startup of the engine and supplied via control valve CV to starting clutch 5. *Id.* at 9:10–19. Therefore, starting clutch 5 is filled with hydraulic oil at the same time as the internal combustion engine is started, as claimed.

Appellants' effort to distinguish Eguchi's method as an "engagement preparation of the starting clutch" (Appeal Br. 4; *see* Reply Br. 3) is not persuasive. A prior art reference does not have to disclose claimed subject matter with the same verbiage to anticipate. Eguchi's disclosure mirrors that in Appellants' Specification in which Appellants disclose the use of starter 8 to run pump on low rotational speed (300 rpms) to start the filling of starting device 2 while starter 8 turns the engine. Spec. ¶ 22. Thereafter, when the internal combustion engine fires, the pump's rotational speed is increased to complete the remaining filling of starting device 2 and operative connection between the engine and transmission. *Id.* Claim 1 covers this embodiment by defining the start of the internal combustion engine as being "started by a starter" rather than coinciding with the internal combustion in the cylinders.

We also are not persuaded by Appellants that the Examiner has relied on features of two different power transmission control systems to anticipate claim 1. *See* Reply Br. 2. The Examiner's reference to conventional prior art systems that display a lag time between starting the engine and engaging the transmission with a clutch to create engine "racing" problems appears to be relied on to show the well-known arrangement that hydraulic pumps are operated in tandem with the engine to pump hydraulic fluid to a clutch as the engine starts. *See* Final Act. 3. Eguchi's inventive control method does not change this prior art arrangement but instead controls a valve CV to supply hydraulic fluid to starting clutch 5 simultaneous with the start of the engine, as claimed, to eliminate engine racing. The Examiner has explained how Eguchi discloses all claimed steps in the embodiment described at columns 8–9. Ans. 5–6. Appellants have not apprised us of error in those findings.

Thus, we sustain the rejection of claims 1 and 3–8.

Appeal 2015-006695
Application 12/917,508

DECISION

We affirm the rejection of claims 1 and 3–8.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED